The mean duration of the annular phase on the central line is 2^m; the greatest is $2^m\ 4^s$; and the least $1^m\ 56^s$, about the times $20^h\ 48^m$ and $22^h\ 12^m$ respectively.

Nautical Almanac Office,
1866, *Dec.* 31.

On the Simultaneous Disappearance of Jupiter's Satellites in the year 1867. By G. B. Airy, Esq., Astronomer Royal.

It may be interesting to Members of the Society to be informed that there will be an opportunity in the year 1867 of observing that very rare phænomenon (hitherto observed, I believe, only twice, one of the observations being that of our Member the Rev. W. R. Dawes) of the simultaneous concealment of *Jupiter's* four satellites. On August 21 *Jupiter* will be without satellites for one hour and three-quarters; and, if the circumstances of the weather, &c., be favourable, all the four disappearances and the four reappearances may be observed in this country. I extract the following numbers from the *Nautical Almanac*:—

	Greenwich Mean Solar Time. h m	
1867, Aug. 21	8 14	The third satellite will enter on Jupiter's face. The Sun will not be very much depressed below the horizon, and Jupiter will not be very high, but this phænomenon may probably be seen. All these which follow may be seen well.
	9 9	The second satellite will be eclipsed in the shadow of Jupiter.
	9 28	The fourth satellite will enter on Jupiter's face.
	10 4	The first satellite will enter on Jupiter's face.
		The four satellites will then be invisible.
	11 49	The third satellite will pass off the disk of Jupiter.
	12 13	The second satellite will reappear from occultation behind the body of Jupiter (its emersion from the shadow having taken place behind the body).
	12 23	The first satellite will pass off the disk.
	13 54	The fourth satellite will pass off the disk.

There will, as usual, be several instances of simultaneous concealment of the three interior satellites; namely, August 14, $8^h\ 20^m$ to $8^h\ 33^m$ (difficult to observe); August 28, $11^h\ 47^m$ to

greenish train, followed, a few minutes after, by a second, of a bright red, vanishing near *Mars*.

As the constellation *Leo* rose, the meteors appeared in greater numbers, three, four, and seven at one discharge, stretching from *Leo* across the zenith, to *Fomalhaut* in the west, some shooting ahead of those that had preceded them; the prevailing colour appeared to be orange, with a long sea-green train; others were of a deep red, like balls of fire, without any train at all.

Some meteors would start as small as a star of the fourth or fifth magnitude, but on reaching the zenith would assume a brilliancy equal or superior to that of *Venus*, the majority going to the W. and S.W.

When the meteors first appeared, we noted the times and vanishing points as near as possible; but at $13^h\ 46^m$ the shower became so thick, that we were compelled to note merely the number that fell in two, three, or ten minutes, as we had an opportunity of looking at the chronometer, counting in concert.

The shower reached its maximum about 14^h, when between $14^h\ 10^m$ and $14^h\ 13^m$ we counted no less than 200 meteors of various sizes.

It was impossible at this time to note any special peculiarities, excepting one meteor about 14^h which commanded attention; starting from *Regulus*, and travelling horizontally towards the south, it threw off in its passage flakes of light like drops of liquid fire.

At $14^h\ 41^m$ the numbers decreased rapidly, the smaller ones being probably lost in the approaching daylight. The last noted, a very fine one, was at $16^h\ 21^m\ 15^s$, disappearing near η *Argus*.

The total number of meteors noted between $13^h\ 3^m$ and $61^h\ 21^m$, amounted to 2742, in addition to the 33 previously observed, 2775 between 10^h and $16^h\ 21^m$. (See Table II.) It is difficult to fix upon any particular Radiant Point, they appeared to rise from all parts of the constellation, and though many undoubtedly rose from near μ, it appeared to us that the majority were from nearer *Regulus*, and about η.

On the night of the 14th only 24 meteors were observed (see Table III.)